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***“This Time is Different: Lessons from
Past Tightening Cycles”***

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Federal Reserve Bank of Boston

Presentation to the Forecasters Club of New York

New York, New York
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Good afternoon. Thank you for the invitation to speak with you today. It is a great time to be speaking at the Forecasters Club of New York, as the path of monetary policy is importantly tied to policymakers’ forecasts for the economy and our confidence in those forecasts.

As I begin, I would note as I always do that the views I will express today are my own, not necessarily those of my colleagues at the Federal Reserve’s Board of Governors or on the Federal Open Market Committee (FOMC).

The July FOMC statementⁱ provided two conditions related to when raising the target range for the federal funds rate will be appropriate. First, the statement indicated the committee needed to see “some further improvement in the labor market.” In my own view, this condition has largely been met by the continued growth in payroll employment – averaging in excess of 200,000 jobs per month, year-to-date through July, and a U-3 unemployment rate – the typical, widely reported measure of unemployment – that is currently at 5.3 percent.

The second condition noted in the statement was that policymakers must be “reasonably confident that [PCE] inflation will move back to its 2 percent objective over the medium term.” For this condition, the data have not been as clear-cut. Core PCE inflation for the past year has only been 1.2 percent, and recently there have been substantial declines in oil prices and other commodity prices. These will likely feed into core (and headline) measures of inflation for some months to come, temporarily lowering inflation readings. Adding to this, recent reports on wages and salaries still show few signs that the tightening labor markets are translating to increases in wages and salaries consistent with reaching 2 percent inflation.

As a result, current data have yet to indicate that this second condition will be met in the coming months; instead, policymakers will need to rely on forecasts of inflation. Unfortunately, over the past several years most forecasts have, incorrectly, predicted that inflation will return to 2 percent – you might say the incoming data have not cooperated with the forecasts. A combination of positive supply shocks, the presence of more labor market slack than is captured by U-3 unemployment readings, and weaker global conditions have no doubt contributed to these forecast errors. Nonetheless, one might still be somewhat confident that we will reach 2 percent

PCE inflation if one sees the U.S. economy as likely to continue growing above its potential, which would further improve labor market conditions.

In effect, then, my view of the forecast for higher inflation rests largely on whether I think the economy will continue to experience growth above potential, and whether the subsequent declining labor market slack will be sufficient to raise my confidence that inflation will return to 2 percent in a reasonable time frame.

Such a forecast needs to be mindful of recent developments, including data that suggest the slowing of foreign economies, coupled with volatile stock prices and falling commodity prices – both of which are consistent with a weaker global economy. In my view, these developments might suggest a downward revision in the forecast that is large enough to raise concerns about whether further tightening of labor markets is likely. And without an expectation of growth above potential and further tightening of labor markets, I would lose my primary rationale for a forecast of rising inflation, diminishing my confidence that inflation will reach the 2 percent target within a reasonable time frame. Indications of a much weaker global economy would at least increase the uncertainty surrounding policymakers' economic growth and inflation forecasts.

The focus of my talk today will be less about the precise timing of an FOMC move on interest rates, and more about the likely trajectory of monetary policy. While market attention has focused on the exact timing of potential rate rises, macroeconomic models of the economy overwhelmingly suggest little impact on the broader economic landscape from moving the timing of initial interest rate hikes forward or backward by a couple of months. However, the future trajectory of interest rate increases – that is, whether increases to more normalized levels

occur quickly or more gradually – *is*, by contrast, likely to have a meaningful impact on employment and inflation.

Today I will argue that there are very good reasons to expect a much more gradual normalization process than occurred in the previous two tightening cycles. Importantly, this is not just my view; the Summary of Economic Projections – the “SEP” – released after the June FOMC meeting, which incorporates the federal funds rate expectations for all the FOMC participants assuming appropriate monetary policy, indicates that Federal Reserve policymakers expect a *gradual* tightening cycle.ⁱⁱ My presentation today will, I believe, illustrate why this more modest tightening path is both necessary and appropriate.

Recent Tightening Cycles

Figure 1 shows the effective federal funds rate over time, highlighting the six months before and after the initial commencement of a tightening cycle. In the past two cycles of tightening, the effective federal funds rate increased rapidly. Just prior to tightening, in January 1994, for example, the federal funds rate was about 3 percent but one year later was 5.5 percent, an increase of almost 250 basis points in that time. In the most recent tightening cycle that began in June 2004, the FOMC raised the federal funds rate by 25 basis points at each of the next eight meetings, thus totaling 200 basis points in the first year following the commencement of the tightening cycle. The figure also shows three dots to illustrate the expected path as indicated in the June SEP.

This implied path of the SEP, illustrated more closely in **Figure 2**, is much slower than the path taken in 2004, with the federal funds rate increasing at roughly half the pace of that

tightening episode. This significantly slower pace reflects that lingering headwinds resonating from the financial crisis, and continued low inflation rates both here and abroad, likely require a different path of tightening.

This Time is Different

Figure 3 shows the inflation rate as measured by the core PCE index. At the beginning of the 1994 tightening cycle, core inflation was somewhat above 2 percent. At the initiation of the 2004 tightening cycle, core PCE inflation was almost at 2 percent; shortly after the tightening, it averaged slightly above 2 percent. In contrast, we are currently well below the 2 percent target, with the core PCE index having risen only 1.2 percent over the past year. While the SEP indicates that core PCE inflation is expected to gradually rise to 2 percent, it is only slowly converging to this point, and similar forecasts made over the past two years have not been borne out by incoming data. Such a modest path to achieving the 2 percent inflation target in my view provides Fed policymakers the latitude to more gradually raise rates as we become more confident that the trajectory of our inflation forecast is likely to be realized.

Figure 4 shows the growth in real GDP, with shading around the commencement of tightening cycles. In the first quarter of 1994, when the tightening cycle was beginning, real GDP over the previous year averaged 3.4 percent. At the start of the 2004 tightening cycle, real GDP growth over the previous year was 4.2 percent. In contrast, over the past four quarters, real GDP has averaged only 2.7 percent. While it is true that potential growth has slowed recently, how large and enduring this slowdown will prove to be is still unknown. Furthermore, real GDP

growth as forecast in the SEP is likely to remain below 3 percent – slower than what was encountered in previous tightening cycles.

Figure 5 highlights the unemployment rate, with shading around the beginning of the tightening cycles. In January 1994 (as well as in the first quarter of 1994 as a whole), the unemployment rate was 6.6 percent. In the second quarter of 2004 the unemployment rate was 5.6 percent. Today, however, at 5.3 percent unemployment in July, we are well below the rate that preceded the past two tightening cycles, although the SEP expects only a gradual convergence in unemployment to 5 percent.

So, by the U-3 measure of unemployment, the commencement of tightening might on the surface seem to be a bit late. However, as shown in **Figure 6**, using a broader definition of unemployment – known as the U-6 – which includes workers who are working part time for economic reasons and workers who are marginally attached to the workforce, a somewhat different picture emerges. In the first quarter of 1994, the U-6 rate was 11.5 percent; in the second quarter of 2004 it was only 9.6 percent. With the current U-6 unemployment rate of 10.7 percent in the second quarter of 2015, and more recently 10.4 percent in July, we are between the two U-6 rates from the last two tightening episodes.

One interpretation of the data could be that the lack of inflation we are seeing to date may reflect that the degree of slack in the labor market is only imperfectly measured by U-3, which would help account for the weak inflation and relatively modest increases we have seen in wages. If one believes the broader measure of unemployment better captures slack in the economy, then labor markets would not be viewed as unusually tight for commencing the

tightening cycle. This potential additional slack would also be a reason for policymakers to follow a more modest interest rate path at the beginning of a tightening cycle.

Anticipation of this Tightening Cycle

Figure 7 shows the two-year Treasury rate, with the commencement of tightening highlighted. Since most of the increase in the federal funds rate usually occurs in the first two years of earlier tightening cycles, as the figure shows, then movement in the two-year rate should capture the market's anticipation of how quickly interest rates are likely to rise. In both 1994 and 2004, for example, there was some modest increase in the two-year rate prior to the tightening, but substantially higher rates ensued once the first tightening had occurred.

Today, with the periodic publication of the SEP and a greater emphasis on communication by the Federal Reserve, there has been significant marketplace discussion of the likelihood of rates rising by the end of 2015. Not surprisingly, the two-year rate has increased gradually as the prospect of a tightening cycle has become more likely. A complicating factor is the flight to quality that occurs with disturbances abroad; problems in Greece and China have probably encouraged some movement into Treasury securities. However, the modest movements to date seem consistent with investors expecting a gradual pace to the tightening.

In my own view, given current and forecast conditions, not only is the pace likely to be gradual, but the federal funds rate in the longer run may be lower than in previous tightening cycles. **Figure 8** compares the federal funds rate three years after the first tightening in previous cycles to the federal funds rate in the longer run, according to the June SEP.ⁱⁱⁱ The median SEP estimate of the federal funds rate in the longer run is 3.75 percent, well below the rates seen three

years after the commencement of tightening in earlier tightening cycles. A much lower endpoint and a gradual tightening path are, in fact, consistent with the only modest increase in the two-year rate to date.

The results of July's Survey of Primary Dealers^{iv} offer another indication that many market participants believe this will be a more gradual tightening cycle. **Figure 9** shows the midpoint estimates of the primary dealer survey for the federal funds range compared with the estimates provided by FOMC participants in the SEP. The primary dealer responses show that their forecast for the path of the federal funds rate is not significantly different than what was provided by FOMC participants in the June SEP – both expect that the tightening path this time will be gradual and is likely to stop at a lower rate than in previous cycles.

Concluding Observations

In summary and conclusion, this period of tightening is likely to differ from the two previous tightening cycles in that inflation is low and real GDP growth is slower than in 1994 and 2004, respectively. While U-3 unemployment is lower now than at the outset of these earlier tightening cycles, the broader measure – U-6 unemployment – is not particularly low compared to the start of the prior two cycles.

The results of the primary dealer survey and the most recent SEP provide further evidence that this cycle of tightening is expected to be more gradual and stop at a lower federal funds rate.

The more gradual tightening cycle should enable monetary policymakers to gauge how tight labor markets can be while maintaining stable prices. The very low inflation rates here and abroad make it a particularly good time to not be too tied to imprecise measures of full employment.

Of course, given the low wage and price inflation data seen to date, and increased uncertainty about global growth, it will be particularly important for monetary policymakers to closely monitor and depend on incoming data.

Thank you.

ⁱ See the statement at <http://www.federalreserve.gov/newsevents/press/monetary/20150729a.htm>.

ⁱⁱ See the June SEP material at <http://www.federalreserve.gov/monetarypolicy/files/fomcproptabl20150617.pdf>

ⁱⁱⁱ For historical context, the longer-run federal funds rate could be measured by the average over a long time period, such as from the first quarter of 1992 to the third quarter of 2008 – 4 percent – or from the first quarter of 1985 to the third quarter of 2008 – 5 percent.

^{iv} The New York Fed's Markets Group surveys primary dealers on their expectations for the economy, monetary policy, and financial market developments prior to Federal Open Market Committee meetings. For more information see http://www.newyorkfed.org/markets/primarydealer_survey_questions.html.